

Determine whether each equation is True or False.

A. $\sqrt{8} = 8^{\frac{1}{2}}$ True False

B. $16^{\frac{3}{2}} = 8^2$ True False

C. $4^{\frac{1}{2}} = \sqrt[4]{64}$ True False

D. $2^8 = (\sqrt[3]{16})^6$ True False

E. $(\sqrt{64})^{\frac{1}{3}} = 8^{\frac{1}{6}}$ True False

Scoring: Worth 1 point. TTFTF

Key and distractor analysis:

A. True

B. True.

C. False. Student did not accurately take the fourth root of sixty-four.

D. True.

E. False. Students may be confusing $\left(64^{\frac{1}{2}}\right)^{\frac{1}{3}}$ with $\left(8^{\frac{1}{2}}\right)^{\frac{1}{3}} = 8^{\frac{1}{6}}$

The Real Number System

N.RN

Extend the properties of exponents to rational exponents.

2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.